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number of the trichomes of the *Arthrospira* held together by a common jelly.

The diameter of the trichome is from 2.5–3 μ. It is regularly twisted into a rather lax spiral, the distance between the turns being 16–18 μ, and the width of the turn about 6 μ. Caduceus forms are not uncommon. The cells of the trichome vary from 4–5 μ in length; the cell divisions in vigorous trichomes are indistinct with few granules and with the cell contents light bluish green by transmitted light. In the majority of the cells large vacuoles are present.

This form is decidedly smaller than either *A. Jenneri* or *A. Platensis* and with a laxer spiral. From *A. miniata* it differs both in habitat and habit, and in the fact that the extremities are not at all capitate. As the species appears to be new, the writer desires to dedicate it to M. Maurice Gomont, of Paris, as a token of his esteem and respect.

The writer wishes also to express his deep obligation to Dr. Bornet and M. Gomont for assistance in determining the above-mentioned forms, as well as others, without which no certainty would have been possible.

Personal Nomenclature in the Myxomycetes.

BY O. F. COOK.

As has been said, there are two ways of naming plants, according to the system of priority, or according to the personal system, which is no system at all. The alleged object of both methods is to secure uniformity of nomenclature, and opinion upon their relative merits depends on whether uniformity with the past is looked upon as more important than uniformity with the future. That the personal system does not always secure uniformity even with the immediate past is evidenced by two recent books, both purporting to be monographs of the same group of organisms. They are based, practically, on the same collections and are published only two years apart. Massee's "*Monograph of the Myxogastres*" recognizes 41 genera. Lister's "*Mycetozoa*" describes 38, but 13 of these are different from those of Massee. Massee has 430 species, of which nearly one-third are not recognized as valid by Lister, while another third have their names changed, so that of the 430 binomial specific names in Massee's book just 160 are to be found in Lister's. The student who would compare or make use of both works must spend much time in more or less fruitless attempts at cross-references, for the indexes are defective.

No charge of adhesion to the laws of priority can be made effective against either Massee or Lister, any more than against their great predecessor Rostafinski. The indications are that all three have believed that variety in names would add a pleasant synonymical spice to the study, with the advantage of discouraging beginners not accustomed to much seasoning of this kind.

Thus to judge from the past the personal system will not give us uniformity, for the recent works differ in nomenclature as much or more than the older. A most radical change, however, must follow any attempt at an application of the law of priority, for it will remove nearly all the names used for the last twenty years, or since the publication of the works of DeBary and Rostafinski. Nearly all the Rostafinskian generic names must be replaced by others now disused for half a century or longer. If, however, these sweeping changes will bring us at once into uniformity with all the future, the wisdom of making them is evident—the sooner the better. Apparently, however, the application of the rules through which uniformity is expected for the higher plants does not give the same promise in the case of the Myxomycetes. A large number of old generic names exist, and their authors included under them forms now recognized as belonging to several different families, for the older writers had absolutely no idea of genera as we understand them. The classification in this group is by no means settled, and the principle that a genus is a negative conception merely, and consists of what may be left under a generic name after subsequent genera are withdrawn, will bring about in the Myxomycetes the result that with changes of view on the relative importance of characters, changes in nomenclature will be necessary. To illustrate by a simple case, the genus *Physarum* was described by Persoon (1797) on four species, as follows:

Physarum columbinum=Lamproderma.

$$\left.\begin{array}{l} \text{“ bivalve}=\text{Angioridium,} \\ \left.\begin{array}{l}\text{“ viride}\\ \text{“ nutans}\end{array}\right\}=\text{Tilmadoche,}\end{array}\right\}=\text{Fuligo.}$$

Thus all the original species of Physarum have at one time or another been removed from the genus, and we are brought to the alternative of dropping the old name or of preserving it by slipping it around over the different generic groups, representatives of several of which were included under most of the old names. If we adopt Lister's characterization of Fuligo we must abandon the genus Physarum in the sense in which recent authorities have used the name, for, as Lister himself states, the generic character of Fuligo depends on the presence or absence of a bell-jar over the ripening plasmodium. Physarum would then either be dropped or passed back to what is now called Lamproderma, a genus of a distinct family. What would then be the confusion if the next writer should find characters on which Fuligo, Tilmadoche and Angioridium might be held distinct?

That there will be immediate uniformity of view on the classification of the Myxomycetes is not to be expected, and if we are to have an arbitrary system of rules by which the law of priority is to be applied in nomenclature it seems that one might be made which would at least fix a generic name to a certain natural group which varying views of classification could change only in size or supposed importance. To follow a principle which may necessitate that a name be passed back and forth between different families or natural orders is to create confusion by law. To drop names based on species which represented new generic types involves a principle so manifestly unjust that continued acceptance of it is not to be expected.

One method by which both these difficulties could be forever avoided is to agree that unless the author of a genus designates a specific type in connection with his original description, the first species referred to the genus may be looked upon as the generic type, the genus to stand only if its type is found distinct from previously named genera. In the Myxomycetes this principle would probably necessitate fewer changes than either of the others. Such a simple method of settling nomenclatorial problems may be thought to smack of empiricism. Its utility and practicality cannot, however, be doubted, and it seems to be in general and growing favor among zoölogists. The only serious objection to its general application seems to be that a large number of names would be changed. Whether the subsequent stability of generic names would not entirely overbalance this objection is a question worthy of careful consideration, for if botanists are to follow arbitrary rules for the sake of uniformity in nomenclature, it is not probable that they will be satisfied until a system is framed which shall insure the uniformity.

New Species of Fungi.

BY J. B. ELLIS AND B. M. EVERHART.

I. SANDWICH ISLAND FUNGI.

Collected by Mr. A. A. Heller, in the Island of Oahu, during the summer of 1895.

MELIOLA SANDICENSIS E. & E.

Mycelium amphigenous, but mostly hypophyllous, forming suborbicular black patches 2–4 mm. diam. with a well defined outline. Mycelium abundant, with opposite spreading branches 6–7 μ thick. Capitate hyphopodia abundant, opposite, small (12–15 × 6–7 μ), short-stipitate, the upper cell ovoid or subglobose; mucronate hyphopodia very scarce, ampulliform with a short, straight neck, found occasionally standing opposite a capitate hyphopodium. Bristles abundant, both on the mycelium and surrounding the lower part of the perithecia, 300–500 μ long, 8–10 μ thick, generally with slight swellings at intervals, translucent-brown at first, finally almost opake, septate at intervals of about 40 μ, gradually attenuated above to a point. Perithecia scattered on the mycelium, subglobose, of coarse, cellular structure, papillose-roughened, 150–200 μ diam. subostiolate, finally collapsing. Asci clavate-elliptical, 50 × 25–30 μ, sessile, 2-3-4-(mostly 2-) spored. Sporidia oblong-cylindrical, 4-septate and constricted at the septa, rounded at the ends, 33–40 × 12–15 μ, brown.

The bristles are so abundant that the patches of mycelium resemble dense tufts of black hair, almost entirely hiding the perithecia. This character, with the greater length of bristles and the comparative absence of mucronate hyphopodia, with the 2–4-spored asci, distinguish this from *M. malacotricha* Speg., *M. amphitricha* Fr., and the other species having similar sporidia.

On leaves of some plant of the Family Rubiaceæ. No. 2369.